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Socio-Cultural Impacts of Rangeland Development Projects

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Socio-Cultural Impacts of Rangeland Development Projects: Final Report

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Socio-Cultural Impacts of Rangeland Development Projects

Executive Summary

The research reported here is designed to meet three objectives. First, a procedure was developed to collect and analyze information on the socio-cultural impacts of rangeland developments. Second, the procedure was implemented in a case study of the Oak Creek Mountain Rangeland Development Project. FInally, a report of the research has been prepared.

I. Procedure Development.

The procedure is an effort to systematize the assessment of the sociological impacts of rangeland rehabilitation and of other Forest Service policies on small rural communities. The procedure is an effort to simultaneously fit within the methodological restraints imposed by the Federal Governments policies concerning data collection via questionnaires and to meet the standards used to evaluate good sociological research.

The first step in developing the general procedure was to identify those aspects of a community and its residents which are relevant to the problem at hand. The variables are grouped into three major areas. The first identifies those characteristics of individuals which may be affected by rangeland developments. The second, organizations, represent a sector of the community which is often overlooked in social impact analysis in spite of its theoretical and practical importance. The third consists of variables that are best viewed as characteristics of the community and do not readily reduce to either of the other two.

Once the variables were identified, a design was developed to describe the communities prior to the rangeland development and to assess the impacts of the development as it is implemented. The pre-project description provides a baseline against which to measure change, information to determine how the residents of an area will interpret the development, and basic data on resident expectations about the development. Three data sources were used to develop the pre-project description: U.S. Census data, local histories and biographies, and conversations with leaders and typical residents of the communities. The use of informal conversations allows us to learn about the values and expectations of local residents.

The use of conversation and involvement in everyday activities is a means for the sociologist to become a well-informed insider: one who comes to know the culture and structure of society as a consequence of the systematic observation and conversation insights gained. By systematically talking to a wide spectrum of residents, the sociologist comes to know and understand the community, its residents and organization from the dual position of insider and sociologist. The result is not numerical scaling in the traditional sense; it is for the most part a qualitative measure of the meaning-content of the society.

The methodology for assessing the impacts of rangeland development involved two techniques; both of which are repeated prior to the project and at multiple points in time after the project is initiated. The first technique ascertains perceived consequences. Each set of conversations probes to determine the "anticipated" consequences of the rangeland rehabilitation project. The second technique examines the "objective" consequences of the developments. It is based on the assumption that the process of interest (whether it is industrialization, a sudden flood, or rangeland development) and the beliefs, values, and existing structure of the community, interact in such a way that there is a "logic" to subsequent changes. For example, the process of industrialization requires a mobile work force that will move to the factory sites. There is a logic to the contention that when mobility is achieved, it will be impossible for the extended family to retain its traditional importance, because grandparents, aunts and uncles, cousins don't move, too. In other words, given demands of industrialization, it is illogical that the extended family will retain its traditional closeness. The "logic" replaces a traditional methodology that uses control or comparison groups or communities. The use of "logic" is needed in those settings where control or comparison communities cannot be obtained because of the difficulty in matching them to the impact communities. Each community represents a collection of many diverse changes. It is extremely rare for any pair of communities to reflect the same blend of changes themselves. Such a situation makes the attribution of consequences of rangeland development based on community comparisons highly tenuous, at best. "Logic" offers a more promising approach.

The general methodology outlined in this section was amplified and applied to a concrete situation. Several Federal, state, and private landowners engaged in an effort to improve the quality of the livestock range of the Oak Creek Mountain Range and nearby areas in Millard and Juab Counties in Utah. Four small communities (Oak City, Scipio, Holden, and Leamington) are located at various points at the base of the range. This development and its impacts on these communities provide the case study for application of the general methodology.

Case Study

The second part of this report divides the presentation of results of the case study into two sections. The first will describe the communities in their pre-project states. The second will discussed the second and third years of data gathering and the analysis based on the logic of rangeland development.

The pre-project baseline was developed through the use of Census data, local histories and a set of conversations conducted in the Summer and Fall of 1983. The conversations were conducted by three persons: the project director, a graduate student in Sociology, and an undergraduate student experienced in interviewing.

The residents possessing key specialized information, such as mayors, clergy, and livestock association leaders were talked with by the principal investigator. The people who are representative of the total population were contacted by one of the other two, each of whom was especially trained for this project. A minimum of 15 persons per community, except Mills, was contacted for each time period. The same persons were interviewed each time. At Mills the number was three due to the very small number of permanent residents there.

The 1980 Census reports show that the four communities have populations that are increasing after a long period of decline. They are highly homogenous with respect to race, ethnicity, education, and culture, but the homogeneity is declining. The communities are losing their traditional agricultural economic base and industry is becoming increasingly important as is governmental employment. The people are as well educated, on the average, as the state as a whole, but median income is much lower.

All of the communities have similar histories and were settled by people with similar backgrounds. They were settled in the mid 1800s by converts to the L.D.S. Church, who saw the location of their settlement as an extension of their conversion in which they were divinely "called" to leave their established homes to come to Utah, and then, settle parts of Millard County. Everyone was LDS, so there was no reason to separate the religious, political and secular activities. There is both a high degree of similarity between the five communities and a considerable degree of homogeneity among the residents of each community. Virtually all of the people interviewed have been in their home communities for most of their lives and have had parents and grandparents who have also lived in the same community.

Since the 1980 Census Scipio and Holden have experienced a drop in out-migration due to the ability of young people to find employment in larger cities, coal mines, or construction within commuting distance. Oak City and Leamington have experienced net in-migration, largely due to the Intermountain Power Project power plant and Martin- Marietta cement plants located nearby. In-migration in both has consisted primarily of the professional people associated with the project who have chosen to live there. In both communities some of the newcomers are quite different from the residents.

The conversations with local leaders and representative residents are used to enrich the census and historical data by providing information about the culture and structure of the communities and about their expectations concerning the rangeland development.

All of the communities are characterized by extensive kinship networks where the majority of the residents are related through extended kinship ties or marriage. Each of the four communities is highly cohesive. The individuals are linked to each other in

close personal ties and there are relatively few cleavages into conflicting groups. There are relatively few groupings, such as business versus non-business, to divide the communities. There is some concern that Oak City and Leamington may find growing divisions due to the challenge of integrating newcomers.

The well-being of residents was assessed by objective and subjective criteria. The housing is generally old and modest, but well kept and neatly decorated. The amenities offered by the communities are very limited. There are many opportunities for outdoor recreation. Most of the people interviewed report they fare very well on the subjective criteria. The people are generally happy and feel their lives are being productive. Virtually no class divisions exist in the communities. The values in the communities are widely accepted; even many of the newcomers hold values similar to the old timers on most of these dimensions. The value emphasis is on individualism, self reliance, family, religion, and agriculture. One of the major characteristics of a modern society is change. In the communities studied, it is neither accepted nor valued.

The organization structure of the four communities is very simple. The only large scale organization in the area is the L.D.S. Church. No business is franchised or strongly linked to people outside the county. Bureaucracy is almost non-existent within the communities, though many must deal with state and Federal agencies such as the Forest Service, BLM, SCS, ASCS, and Utah DNR.

The community structure is also very simple. Land use is either agricultural, residential, or community. There is virtually no commercial use. Each community has a store. Holden has a restaurant. Physical facilities include parks in Scipio and Oak City, volunteer fire departments, and post offices. No school is open in any of the cities. Each has a church house.

The relationship of the communities to the Forest Service is rather variable. Oak City and Leamington dislike the organization and its policies which are viewed as being based on errors, especially range management. Holden and Scipio have positive attitudes toward the Forest Service and its policies.

The differences in attitude toward the Forest Service are reflected in expectations about the specific range management program to be evaluated in this project. Oak City and Leamington residents take a skeptical, wait and see attitude. The idea is good, but whether any positive impacts result will depend on whether and how the final phases of the project are implemented. On the other hand, people in Holden and Scipio have positive expectations about the project. The feeling there is that the project will make the participants better off economically. The feeling is also expressed that this will help these two communities retain the existing value system and community structure. The Scipio

and Holden residents also indicate the idea of the project and its implementation to 1983 had already had a positive impact because some people who might have left agriculture otherwise are able to stay. It has made agriculture and the associated values the way of life seem much more promising and profitable. The feeling is that agriculture is still the way to live and that another generation will make it in this enterprise.

After the initial interviews were conducted, the range rehabilitation project was pushed forward over a two year period. However, there was greater direct participation and involvement in the rehabilitation project in Holden-Scipio than in Oak City-Leamington. As a result, the project advanced more rapidly in the first two communities. The second and third sets of interviews were conducted in 1984 and 1985 as planned. Those interviewed in the first phase were re-interviewed two times.

The attribution of impacts on Oak City and Leamington are greatly complicated by two major factors. First, IPP has progressed on schedule. Its construction has had significant impacts on the two towns. Second, nationally, agriculture has had serious difficulties over the last two years. The rangeland rehabilitation project has had no effect on migration in Oak City or Leamington. Scipio has reversed its population decline, but it shows virtually no increase. Holden appears to have increased slightly. The rangeland project has had some small impacts on population by enabling a few young people to stay in the area to farm with their parents or take over the family operation. The impact will not sustain long-term population growth nor will it result in large increases.

The rangeland project appears to have had two kinds of impacts on interpersonal networks. First, there are indications in Holden and Oak City that there is slight resentment over preferential treatment of some land and permit holders who benefit disproportionately from the project. Second, some people in Scipio and Holden have been able to maintain their lifelong friendships and extended family ties by virtue of being able to stay in these communities or by having children stay due to the rangeland project. No impacts were noted for Leamington.

In the short run the rangeland rehabilitation may adversely affect the cohesion of the community. The project re-asserts the viability of agriculture and sets the stage for some conflict with newcomers because industries require an attitude and approach to life that differs from agriculture. In the long run, however, the strength of agriculture will provide a source of cohesion when IPP construction is gone. As the industrial alternative declines in numbers and importance, the agriculture interests will have an opportunity to demonstrate their viability and reassert their primacy.

The rangeland rehabilitation project does not offer much in the way of change in well being in general; however, some of those most directly involved in the project are beginning to find they have more money available for housing and other personal effects. It has also produced an increased sense of security, especially for those benefitting directly. The range rehabilitation will have a weak tendency to support the existing situation with relatively little class structure. Those being most benefitted by the project are also strongly oriented to a community without class divisions. The range rehabilitation project has produced no changes in values. However, it does seem to confirm the values of the long time residents, especially in Scipio and Holden. The agricultural values, in particular, are strengthened for those who have always held them.

The organizational structure of the four communities has not changed. The project has one major organizational consequence, while it is still being developed. It forces the project participants to work with public officials of the Forest Service and BLM on a more frequent and intensive basis than in the past. In Holden and Scipio, this has resulted in more positive ties and an acceptance of the agency personnel as experts. In Oak City, the ties have grown more positive. In Leamington, attitudes toward the public agencies do not appear to have changed. Community structure also remains unchanged. The rangeland project, especially in its most recent phases, has strengthened the positive ties and attitudes between the Forest Service and locals. It appears to most that the expertise involved in the project development and management is working. The feeling that the project has reinforced the viability of agriculture is strongly present.

Summary and Recommendations

There are three major conclusions that emerge from the study. First, even against the background of some fairly dramatic extraneous changes in a community, such as Oak City and Leamington, it is possible to extract the impacts of a less dramatic, but significant project such as the rangeland rehabilitation project. The general procedure presented here represents an effort to systematize the assessment of the sociological impacts of rangeland rehabilitation and other Forest Service policies on small, rural communities. The procedure developed represents an effort to simultaneously fit within the methodological constraints imposed by national policies concerning data collection and to meet the standards used to evaluate good sociological research.

Second, a project such as the rangeland rehabilitation project has two major components that must be separated and examined carefully. There is a direct project impact, such as the project development producing changes in beliefs about the viability of agriculture as a way of life. For example, some people in Scipio and Holden have been reinforced in the belief that agriculture is now something they and their children can continue to make a living in. In addition, an indirect project impact arises due to the way it is perceived by residents. Residents must be seen as rational actors who gather data, process it as information and give meaning to their surroundings and changes in it. The announcement of the project and its implementation lead to conclusions about the future that are reasoned out based on past experience and beliefs.

A manager of such a project must anticipate the direct impact and indirect impacts both as natural phenomena and as information for decision-making by the residents. In many ways, by treating the locals as rational actors, the agency personnel have succeeded in giving farmers in Holden and Scipio information that they can use in deciding how to conduct their lives and assisting them in making their decisions. One of the problems in Oak City and Leamington when contrasted with Scipio and Holden is that the agency claims are not viewed as being credible by the locals. As a consequence they do not decide to act "as if" the project is going to succeed. Such an act inhibits both the direct and indirect effects of the project.

Third, Forest Service personnel must continue to improve their skills in communicating their plans and in making them credible to the locals. The indirect impacts of the project are a direct function of the image of the Forest Service in these communities. When the Service personnel are accepted as reliable experts, the locals act favorably and help to create positive impacts. Where the personnel do no enjoy such positive reputations, the locals create neutral or negative indirect impacts.

SOCIO-CULTURAL IMPACTS OF RANGELAND DEVELOPMENT PROJECTS

Final Report

The research reported here is designed to meet the three major objectives:

I. Develop a procedure for collecting, analyzing and presenting relevant socio-cultural impact information about rangeland developments. (The procedure must be consistent with current Forest Service methodology and does not require use of questionnaires);

II. Utilize the communities of Scipio, Mills, Holden, Oak City, and Leamington as case study areas to test the procedure developed under objective I;

III. Prepare an impact report to describe 1) the procedures used; 2) the results of the case study; and 3) possible activities Forest Service personnel may use to guide the impact process.

I. Procedure Development

The first step in developing a general procedure was to identify those aspects of a community and its residents which are relevant to the problem at hand. There are two major sources of such an identification. First, the U.S. Forest Service has developed a set of manuals specifying the variables of interest to the Forest Service. One such manual is Social Impact Assessment: An Overview. Second, the field of sociology has become sufficiently well-organized so that several variables can be considered sociologically significant. Fortunately, most of the items included in the Forest Service list are also among those considered sociologically significant. In addition, excellent theoretical arguments are presented in the Social Assessment Manual for the sociological significance of these variables and their theoretical relationships.

Exhibit 1, on the following page, lists those variables to be examined in the present study. The variables are grouped into three major areas. The first identifies those characteristics of individuals which may be affected by rangeland developments. The second, organizations, represent a sector of the community which is often overlooked in social impact analysis in spite of its theoretical and practical importance. The third consists of variables that are best viewed as characteristics of the community and do not readily reduce to either of the other two.

Once the variables were identified, the main problem was methodological: a design to provide data to 1) describe the communities along the dimensions selected prior to the rangeland development

project and 2) assess the impacts of the rangeland development as it is implemented.

A. A pre-project description of each of the communities is necessary for two fundamental reasons. First, it provides a baseline against which to measure change. The descriptive information obtained before range improvements, or other Forest Service action makes it possible to discover changes which occur by comparing later data with the description of the pre-project phase. Second, the description of culture and values will be used to understand why people respond to the rangeland development as they do. The study takes the position that "as human beings we act singly, collectively, and societally on the basis of the meanings which things have for us." (Blumer, 1956: p. 685) The meanings are ordinarily held in common by most members of the group and surface as part of the culture, values, expectations, and plans that people use to interpret the rangeland developments.

> "We can and, I think, must look upon human group life as chiefly a vast interpretative process in which people, singly and collectively, guide themselves by defining the objects, events, and situations which they encounter." (Blumer, 1956: p. 685)

The responses of people and groups to the project are assumed to be at least as much a result of their interpretation of a development as of its physical dimensions.

The description of communities can be developed out of three data sources. 1) A considerable amount of secondary data, especially U.S. Census information, characterizes many of the economic and demographic dimensions of the communities and counties in which

affected communities are located. Much of the information is available for several points in time so that pre-project trends can be identified. Such data provides considerable demographic and structural information, but it lacks meaning content. Additionally, some of the Census data is not presented for communities as small as those often studied in projects such as this one. 2) Many communities have their own written histories, personal journals, and biographies which can reveal a considerable amount of information about the culture and values of the community as well as historical trends. 3) Finally, local residents can be contacted to provide conversational accounts of the nature of their communities. Two sets of residents should be selected. The first set, key informants, are selected on the basis of their access to key items of information because of their position as representatives of organizations within the community. The second set, typical citizens, are ordinary actors within the community. They are selected at random to assure a sampling of citizens that provides a complete accurate characterization of the community. The two sets provide access to the perspectives of the powerful, the minorities and the ordinary in the community. Those selected can then be engaged in informal conversations using probing questions to elicit the needed information. All of those contacted must be informed of the research before they discuss their community.

The use of the informal conversations to develop the description of each community is based on the view that the residents and their groups act on the basis of meaning of the situation with

which they are currently confronted and their plans and goals. This view requires that the traditional sociological approaches to measurement and data analysis not be employed. Similarly, the requirements of the study design prohibit most such techniques, including formal written and oral surveys. Sociologists such as Blumer (1956), Garfinkle (1976), Erikson (1976), and Circourel (1964) have developed alternative techniques and their theoretical rationales. They argue that the traditional experimental or survey methodologies are inadequate for several reasons. The inadequacies include a lack of ability to probe meanings in any depth, the failure to include individual and collective planning, goal pursuit, decision-making, and innovative capabilites. Traditional approaches also include the erroneous importation of concepts such as causality into human endeavors. The details of these criticisms can be examined in the references cited above as well as Habermas (1971).

The methodology proposed as an alternative to traditional techniques is based on that assumption the meaning is best discovered through informal contacts between the sociologist and the people of the community. The informal contacts are of two varieties: informal conversations and unobtrusive observation of the everyday activities of residents.

The informal conversations are not interviews with fixed questions and response categories. They are discussions with individuals. In the course of the discussion, the sociologist asks questions that direct the conversation to the parts of the individuals beliefs and actions that are significant to the sociological

purposes of the project. In the present project, comments about each variable were obtained from the individuals interviewed. The persons interviewed came from one of two sets of people in the community. Key people, such as mayors, clergy, and agriculture-business leaders were interviewed as persons who had access to a broad spectrum of information and in depth understandings of the communities and local trends. Addition- ally, a random sample of people in each community was engaged in conversation to assure a cross-section of opinions. If the people involved in conversation were in organizational positions, similar discussions of their organizations were engaged in. As the discussion proceeded, it was left sufficiently open and free so that the individual was also able to give direction to the conversation thereby adding information he or she felt was important.

The observation of everyday activities was accomplished by spending time in local centers such as churches, stores, parks and cafes. The styles of interaction, language, and conversation content were all observed in such settings.

The use of conversation and involvement in everyday activities is a means for the sociologist to become a well-informed insider: one who comes to know the culture and structure of society as a consequence of the systematic observation and conversation insights gained. By systematically talking to a wide spectrum of residents, the sociologist comes to know and understand the community, its residents and organization from the dual position of insider and sociologist. The result is not numerical scaling in the traditional sense, it

is for the most part a qualitative measure of the meaning-content of the society.

B. The methodology for assessing the impacts of rangeland development involves two techniques, both of which are based on observations at multiple points in time, so that the process of change resulting from the development could be followed. The observations involved repetitions of the conversation-observation techniques at three distinct points in time: a pre-project period, one year into the project, and two years into it.

The first technique ascertains perceived consequences. Each set of conversations probes to determine the anticipated consequences of the rangeland rehabilitation project. The conversations from the last two time points sought information concerning the perceived consequences and the feelings of the people with regard to these consequences.

The second technique examines the "objective" consequences of the developments. The technique is similar to that used in a broad range of well-accepted studies such as Clark Kerr, et al. in the Logic of Industrialism and Kai Erikson in Everything in Its Path. The technique is based on the assumption that the process of interest (whether it is industrialization, a sudden flood, or rangeland development) and the beliefs, values, and existing structure of the community, interact in such a way that there is a "logic" to subsequent changes. For example, the process of industrialization requires a mobile work force that will move to the factory sites. There is a logic to the contention that when mobility is achieved,

it will be impossible for the extended family to retain its traditional importance, because grandparents, aunts and uncles, cousins don't move, too. In other words, given demands of industrialization, it is illogical that the extended family will retain its traditional closeness. The "logic" replaces a traditional methodology that uses control or comparison groups or communities. The use of the "logic" is needed in those settings where control or comparison communities cannot be obtained because of the difficulty in matching them to the impact communities. Each community represents a collection of many diverse changes. It is extremely rare for any pair of communities to reflect the same blend of changes, themselves. Such a situation makes the attribution of consequences of rangeland development based on community comparisons highly tenuous, at best. "Logic" offers a more promising approach.

The general methodology outlined in this section was amplified and applied to a concrete situation. The U.S. Forest Service, Bureau of Land Management, Soil conservation Service, state agencies, and private owners engaged in an effort to improve the quality of rangelands of the Oak Creek Mountain Range and nearby areas in Millard and Juab Counties in Utah. Four small communities (Oak City, Scipio, Holden, and Leamington) located at various points at the base of the range. This development and its impacts on these communities provide the case study for application of the general methodology.

The second part of this report divides the presentation of results of the case study into two sections. The first will describe

the communities in their pre-project states. The second will discuss the second and third years of data gathering and the analysis based on the logic of rangeland development. As a consequence, the report will (a) describe the communities at each point in time and the way in which they change, (b) discuss the manner in which some of the changes "logically" follow from the rangeland development and (c) describe the role of the Forest Service personnel in consciously and systematically inducing some of the changes.

II. Case Study

A. Introduction

The techniques elaborated in the procedure development phase of this research were implemented in a case study of the five communities near the Oak Creek Mountain Range: Holden, Oak City, Leamington, Mills, and Scipio. The observational-conversational phase of the study was conducted in each community at three separate points in time. The time points were late Fall 1982, Fall 1983, Winter 1984, and Spring-Summer 1985. In the first, a description of communities before the project and expected changes due to the project and other developments was developed. After the first time point, a discussion of changes in the communities and the consequences of the rangeland development was included in the conversations. Other sources of change in the communities, such as the construction of a major coal-fired power plant near Oak City and Leamington and a cement plant east of Leamington were also explored in the conversations.

The conversations were conducted by three persons: the project director, a graduate student in Sociology, and an undergraduate student experienced in interviewing. The residents possessing key specialized information, such as mayors, clergy, and association leaders were talked with by the principal investigator. The people who are representative of the total population were contacted by one of the other two, each of whom was especially trained for this project. A minimum of 15 persons per community, except Mills, was contacted for each time period. The same persons were interviewed each time. At Mills three people were contacted due to the very small number of permanent residents there.

As indicated above, the persons selected for conversation were drawn from one of two lists. The first list included those most influential in the community. Some were the holders of formal positions such as mayors, ecclesiastical leaders and presidents of the Cattlemen's Association. Others were added to the list on the basis of their informal influence. The second list contained every family residing in the community. It was constructed from existing listings such as the telephone directory, public records, and knowledge of local residents. After the names on the first list were omitted, a random sample was selected for conversations from this list.

The conversations were conducted in the homes of the residents. They were not tape recorded, nor were notes taken in the presence of persons engaged in conversation. The member of the project team who participated in the conversations, tape recorded his

recollection of the conversations immediately after leaving the home. This helped maintain the informal, open-conversation structure of the contacts.

B. Pre-project description

Two major sources of information which describe the communities prior to the full implementation of the rangeland rehabilitation project were consulted to develop a base line description of the communities. First, the secondary data from U.S. Census sources and local histories are reported. Second, the results of the first set of informal conversations and observations are presented.

A. The Census data often do not show information for communities as small as those of interest here. However, when separate information is not reported, it is available at the county level. All five communities are located in Millard County, Utah, though a portion of the mountain range is in Juab County.

Table 1 presents the historic population growth of Millard County. The population of the state of Utah is included for comparative purposes. It shows that while the state has experienced a steady

TABLE 1

Population Patterns of Millard County

and the State of Utah: 1860 to 1980

YEAR	UTAH POPULATION	% CHANGE	MILLARD COUNTY	% CHANGE
1869	40,273	-	715	-
1870	86,786	115.5	2,753	285.0
1880	143,963	65.9	3,727	35.4
1890	210,779	46.4	4,033	8.2
1900	276,749	31.3	5,678	40.8
1910	373,351	34.9	6,118	7.7
1920	449,396	20.4	9,659	57.9
1930	507,847	13.0	9,945	3.0
1940	550,310	8.4	9,613	-3.3
1950	688,862	25.2	9,387	-2.4
1960	890,627	29.3	7,866	-16.2
1970	1,059,273	18.9	6,988	-11.2
1980	1,454,330	37.3	8,736	25.0

growth pattern with fairly constant growth rates except during the Great Depression and World War II, Millard County has experienced population decline between 1930 and 1970. This is not a-typical of rural counties in Utah or the Intermountain West, however. From 1970 to 1980, Millard County shows a reversal of the decline. This is also a typical pattern for rural Utah and the United States as a whole. The increase in 1970 to 1980 is not as high as the state as a whole, however.

Table 2

Population of selected towns in Millard county from 1930 to 1980

City	1930		1940		1950		1960		1970		1980	
	N	%	N	%	N	%	N	%	N	%	N	%
Leamington	NA		279	-	214	-23.3	190	-11.2	112	-41.1	113	0.1
Holden	485	-	500	3.1	476	-4.8	388	-18.5	351	-9.5	364	3.7
Oak City	340	-	391	15.0	334	-14.6	312	-6.6	278	-10.9	389	40.0
Scipio	544	-	595	9.4	491	-407.5	328	-33.2	264	-19.5	257	-2.6

Table 2 presents the populations of Holden, Leamington, Oak City and Scipio from 1930 to 1980. Generally, these towns suffered a decrease in population for 1950 to 1970. The decline continued in Scipio through 1980. Holden and Leamington had very slight increases. Oak City grew at a rate that exceeds both the state and county from 1970 to 1980. From 1980 to 1985, Oak City and Leamington have experienced substantial additional growth, largely due to the IPP power project. Scipio and Holden have stayed about the same for the half decade. The population of Mills is so low it is not included in Census reports, but it has declined slightly throughout the period from 1950 to the present.

Table 3 shows the percentage of whites in Millard County and the State of Utah from 1930 to 1980. It can be seen that Millard County has traditionally been racially homogeneous. Closer examination reveals, that the county's homogeneity has dipped slightly since

1980. Indo-Chinese refugees who have settled in Fillmore are the main component of this change.

Table 3

Percent of Whites in Millard County
from 1930 to 1980

YEAR	MILLARD COUNTY	STATE OF UTAH
1980	95.4	94.6
1970	98.9	97.4
1960	98.9	98.1
1950	99.4	98.3
1940	98.5	98.7
1930	98.5	97.7

Table 4 gives the racial distribution of Millard County in 1980. The category of "OTHER" is largely made of Cambodians, Laotians, and Hmongs; all Indo-Chinese refugees. None of these groups are located in the five communities of interest, which are even more homogeneous than the county as a whole.

Table 4

Racial Distribution of Millard County, 1980

TOTAL POPULATION	8,970
WHITE	8,557
BLACK	1
AMERICAN INDIAN	137
JAPANESE	2
CHINESE	70
FILIPINO	1
KOREAN	5
VIETNAMESE	57
OTHER	140

The Atlas of Utah reports that 88.31% of Millard County residents belong to some religious denomination. The majority of the residents are affiliated with the LDS Church comprising 87.18% of the population. Members of the Southern Baptist Convention, Roman Catholic Church, and United Presbyterians comprise the other 1 percent of church affiliates. For the entire state of Utah, 81.45% of the population is affiliated with a religious denomination. 72.12% of the population are members of the LDS Church.

Millard County has traditionally been an agricultural region. Table 5 shows, however, that as an industry, agriculture is declining and manufacturing is increasing as employers of the county's residents. The 1980 Census Report groups agriculture with forestry and fisheries, requiring us to use this triad as the lowest common denominator. Census from other decades shows, however, that forestries and fisheries employ only about a half dozen people in the county.

Table 5

Distribution of employees in Selected Industries, Millard County

	AGRICULTURE, FORESTRY, FISHERS,		MANUFACTURING	
YEAR	N	% TOTAL WORK FORCE	N	% TOTAL WORK FORCE
1980	585	17.9	398	12.2
1970	559	22.1	174	6.9
1960	924	36.4	77	3.0
1950	1,348	56.0	76	2.7
1940	1,167	52.8	37	1.7
1930	1,654	58.5	NOT AVAILABLE	

The decline in agricultural employment is not compensated for by the growth in manufacturing. Major growth has occurred in services and government employment. In addition, construction of IPP has created a substantial number of positions in construction. The addition of a cement plant near Leamington has added manufacturing employment since the 1980 Census data became available.

Major employers in Millard County are listed in Table 6 as found in Utah County and Community Economic Facts (1980). This source didn't include the cement plant or the Intermountain Power Project. The cement plant employs about fifty people as of 1985 and IPP has approximately 2500 construction workers and 450 permanent employees. The construction force will decline to zero within two years and the operations force will approach 560 within the same period. The latter has become the major employer, but both in terms of construction employment and plant operations.

Table 6

Largest Employers in Millard County

NON-MANUFACTURING

FIRM NAME	SERVICES/PRODUCTS	# OF EMPLOYEES
Federal, State, Local offices	Government	300
Millard School District	Education	265
Union Pacific Railroad	Transportation	75
West Millard Hospital	Health Care	65

MANUFACTURING, MINING, OR PROCESSING

Castle and Cook (West Foods)	Mushrooms	135
Brush Wellman Corporation	Beryllium Concentrate	95
Review Apparel	Women's Apparel	75
Review Sportswear, Incorporated	Clothing	40
Mountain Maid Mulch	Mulch; Fertilizer	15

Table 7 gives the average years of formal education completed by persons over 25 years of age. Data were not available from the 1980 Census for this table. Prior to 1960 the educational level of females was clearly below that for males in the state. However, since 1960 the level is very close to the state median for both males and females.

Table 7

Median School Year Completed, Millard County and the State of Utah

	1940		1950		1960		1970	
	M	F	M	F	M	F	M	F
UTAH	10.0	10.4	11.8	12.0	12.2	12.2	12.6	12.4
MILLARD	9.9	10.2	10.7	11.6	12.0	12.2	12.4	12.4

While the median is very close to that for the state, the percent of people over 25 years of age who have completed high school is not. Table 8 shows that the percent of both males and females who have completed high school is below that for the state. The data from the 1980 Census combines male and females.

Table 8

Percentage of Persons who have Completed High School

	1940		1950		1960		1970		1980
	M	F	M	F	M	F	M	F	M F
STATE	35.3	38.0	47.3	50.7	54.9	56.8	67.2	67.3	80.0
MILLARD	31.3	34.5	37.7	44.4	50.0	47.7	61.0	64.7	77.4

Table 9 contains the percentage of people who are over 65 years. Close analysis reveals a trend where the percentage is increasing in Utah, but not as rapidly as Millard County. From 1970 to 1980, however, Millard County leveled off.

Table 9

Percentage of the Population Over 65

YEAR	MILLARD COUNTY	STATE OF UTAH
1930	4.2	4.5
1940	5.5	5.5
1950	6.0	6.2
1960	9.1	6.7
1970	12.6	7.3
1980	12.6	7.5

This comparatively large percentage of senior citizens may help account for the high death rate, the low marriage rate, and much lower divorce rate than the rest of the state. The crime rate, while lower than the state rate, ranks Millard County 10th out of the 29 counties in Utah. All of the rates presented on Table 10 are per 1,000 population except for the crime rate, which is per 100,000 population.

Table 10

Common Social Statistics for 1985

RATE	STATE	MILLARD COUNTY
BIRTH	26.3	26.1
DEATHS	6.3	9.4
MARRIAGE	12.4	7.0
DIVORCE	5.1	1.7
CRIME	5,127	1,371

Table 11 contains the comparative incomes of families in Millard County and the State of Utah. Dollar amounts for censuses prior to 1980 have not been adjusted to account for inflation.

Table 11

Median income for families

YEAR	UTAH	MILLARD COUNTY	MILL. AS % OF UTAH
1980	20,026	15,038	75.1
1970	9,320	6,819	73.2
1960	5,266	3,435	65.2
1950	3,001	2,347	78.2

The median of $15,038 for Millard County in 1980 ranks 20th among the 29 counties in Utah. Generally, that position has not changed over the years. The 1980 U.S. Census also reports that the median income of families in Holden, Leamington, Oak City, and Scipio was $13,839, $12,917, $14,375, and $16,044, respectively.

In summary, Millard County has a population that is increasing, highly homogeneous, though not as much so as in the past and is losing its agricultural flavor to industrialization and government employment. It is as well educated as the state in general, though median income is much lower.

The conversations with local leaders and representative citizens were carried out in each of the five communities. The conversations were conducted as outlined in Part I, except that some of the first interviews revealed a need to expand the set of people interviewed in Oak City and Leamington to include some of the newcomers who

were not included in the original lists used to construct the random sample and the leader list.

All of the communities have similar histories and were settled by people with similar backgrounds. They were settled in the mid 1800's by converts to the L.D.S. Church. In most cases, the people who settled the area saw the location of their settlement as an extension of their conversion in which they were first divinely "called" to leave their established homes (commonly in Scandinavia, Switzerland or Great Britain) to come to Utah, specifically to Salt Lake City. Once in Salt Lake, they were subsequently "called" to settle parts of Millard County. They were also "called" to establish an orderly agricultural community organized around a strict blending of religious principles with secular affairs. Everyone was LDS, so there was no reason to separate the religious, political and secular activities. Given the uniformities in history of the communities and in the background of their residents, it is not surprising that there is both a high degree of similarity between the five communities and a considerable degree of homogeneity among the residents of each community. Virtually all of the people interviewed have been in their home communities for most of their lives and have had parents and grand parents who have also lived in the same community. This is particularly true of the people who provide religious and political leadership, with one notable exception: the leader of the LDS stake that includes the Scipio-Holden area is originally from Salt Lake county. Even this exception

confirms the homogeneity. He is highly successful in agriculture and exemplifies LDS religious and family ideals.

In the past, the migration that has occurred in these communities has been out-migration. Natural population growth has not been sufficient to make-up for it. The signs of out-migration can be seen in each of the communities where vacant homes and businesses can be seen. The most extreme examples are in Scipio and Mills. However, that migration has been interpreted by the residents in interesting ways: it is generally seen as a sign of the virility and vitality of the residents who succeed in having off-spring who can leave the area and compete successfully with the city dweller. In addition, several respondents have suggested that these cities were over-populated. In the twenties, thirties and forties when population was highest, many families were unable to raise enough to provide for their members. Consequently, the people were underfed, ill-clothed, and poorly housed. As many moved away, those who have remained are those who are strong and resourceful enough to make a success of life in these small communities. Those having difficulty were the ones who moved on.

Recently, most of the out-migration has stopped (except in Mills) and population growth has occurred. Scipio and Holden have experienced a drop in out-migration due to the ability of young people to find employment in larger cities, coal mines, or construction within commuting distance. Oak City and Leamington have experienced net in-migration, largely due to the IPP power plant and the cement plant. In-migration in both has consisted

primarily of the professional people associated with the project who have chosen to live there. Most of the blue collar workers are locating closer to the project. Oak City has also attracted professionals from Delta, the nearby county seat, who dislike the way Delta is growing. In both communities some of the newcomers are quite different from the residents: they are from outside of Utah and increase religious and cultural diversity.

A major concern of the conversations was to map the ways in which individuals are interlocked through family, friendships and work. All of the communities are characterized by extensive kinship networks where the majority of the residents are related through extended kinship ties or marriage. Leamington and Oak City are also tied to each other through a number of families that are interlocked. The majority of residents are also tied to several others in their community through life-long friendships. Some newcomers in Oak City and Leamington are isolated in the sense that they are neither tied to others through the kinship networks nor through their life-long friend- ships. The quality of friendships they do develop differs from the long time residents because of their lack of history, and because of the general exclusivism on the part of the long time residents.

Each of the four communities is highly cohesive. The individuals are linked to each other in close personal ties and there are relatively few cleavages into conflicting groups. Virtually all respondents stressed the high degree of cohesiveness. There

are relatively few groupings, such as business versus non-business, to divide the communities. There is some concern that Oak City and Leamington may find growing divisions, however. First, both face the challenge of integrating newcomers. It is a problem because several of the newcomers are outsiders on several criteria: state of origin, orientation to agriculture, work, and religion. Many of the usual integrating mechanisms used in these places center on agriculture and religion. However, Oak City is trying to overcome the problem by establishing many activities, such as picnics, on a city basis rather than Church. Second, Oak City has recently been divided into two ecclesiastical units (wards) instead of one as in the past. This may divide the community to some extent along the unit boundaries.

The well-being of the residents was assessed by objective and subjective criteria. The housing is generally old and modest, but well kept and neatly decorated. It is not middle class by urban standards. The amenities offered by the communities are also limited. Typically, each community has one small store There are many opportunities for outdoor recreation through participation in adult athletics and use of the mountains. Opportunities for cultural events are almost non-existent, except those on television. Most of the people interviewed report they fare very well on the subjective criteria. The people are generally happy and feel their lives are being productive. There is a relatively high level of security.

Virtually no class divisions exist in the communities. Certainly no large differences as are in urban areas. A group of middle aged long time resident males are very powerful on most political and social dimensions, but they hardly form a class division.

The values in the communities are widely accepted, even many of the newcomers hold values similar to the old timers on most of these dimensions. The value emphasis is on individualism, family, religion, and agriculture. Most of the people interviewed stress the significance of self reliance and being able to act without fear of a lot of social pressure. There is a substantial amount of subtle social pressure, however. People place high value on family, not simply in the stereotypical way of saying it is important, but also in terms of actively striving to hold the family unit together. There are clear efforts to keep children nearby, even

after they marry. Family also involves closeness to the extended family, as well as the nuclear one. Religious values taught by the LDS Church are widely held and practiced. Agriculture is clearly accepted as the preferable way of life. Many people generally feel that it is sufficiently important that they will work full time at a non-agricultural position or have their wives work to make it possible to farm a few acres part time. While agriculture is highly valued in Oak City and Leamington, few are able to pursue it full time. They hold other types of jobs, but still prefer agriculture. More people in Holden and Scipio are able to be involved in agriculture full time. However, in several cases, the wife works outside the home to make this possible.

One of the major characteristics of a modern society is change. People come to accept change as a fact of life and in many cases place a positive value on it (Inkles and Smith, 1972). However, in the communities studied change is neither accepted nor valued. When asked how they would change their communities, the respondents indicated they live where they do because they don't want change. Many said that if newcomers have any desire to change things, they had best move on.

The organization structure of the four communities is very simple. The only large scale organization in the area is the L.D.S. Church. There are a few people who are associated with the Cattlemen's Association. No business is franchised or strongly linked to people outside the county. Bureaucracy is almost non-existent within the communities, though many must deal with state and Federal

agencies such as the Forest Service, BLM and USDA: something which is resented but seen as a practical necessity.

The community structure is also very simple. Land use is either agricultural, residential, or community. There is virtually no commercial use. Each community has a store. Holden has a restaurant. Physical facilities include parks in Scipio and Oak City, volunteer fire departments, and post offices. No school is open in any of the cities. Each has a church house. At the time of the first interviews, all of the people had to go to Fillmore or Delta for health and dental care. No mental health services were available, locally beyond peer help.

None of the community leadership is oriented to rapid, large scale change. Scipio and Holden see no prospects for changes, whether in terms of population growth, industrialization, or cultural. Oak City leadership are resisting population growth. In the first interviews, they expressed a desire for restricted growth to make it compatible with what existed. They were fighting the entry of blue collar workers from IPP and resisting requests for annexation of land outside the city limits. Similarly, there was little desire to allow business or industry in. Leamington has been modernizing some public works, but population growth is restricted because few landowners are Interested in selling land within the city.

The relationship of the communities to the Forest Service is rather variable. Oak City and Leamington dislike the organization

and its policies. The policies are viewed as being based on errors, especially range management. Much of this may be due to the fire which got out of control four years ago and caused some property damage in Oak City. Interestingly, the attitude toward local forest Service Personnel is very positive and appreciative.

Holden and Scipio have positive attitudes toward the Forest Service and its policies. Even range management policies that create economic difficulties are viewed as temporary necessities leading to long-term improvements.

The differences in attitude toward the Forest Service are reflected in expectations about the specific range management program to be evaluated in this project. Oak City and Leamington residents take a skeptical, wait and see attitude. They say the idea is good, but whether any positive impacts result will depend on whether and how the final phases of the project are imple- mented. On the other hand, people in Holden and Scipio have positive expectations about the project. The feeling there is that the project will make the participants better off economically. This is expected to have a multiplier effect reaching many others in town. Some are talking of increased productivity making it possible to bring a son into the operation or to make it profitable to turn over to him. The feeling is also expressed that this will help these two communities retain the existing value system and community structure.

The Scipio and Holden residents also indicate the idea of the project and its implementation to 1983 had already had a positive impact. The positive expectations led some people to stay in

agriculture who might have left it otherwise. It has made agriculture and the associated values and way of life seem much more promising and profitable. The feeling is that agriculture is still the way to live and that another generation will make it in this enterprise.

In general, the rangeland management project is located in an area of four highly homogeneous communities where traditional rural values are held and efforts are engaged in to avoid change. In 1983 the Oak City-Leamington area was taking a wait-and-see attitude toward the rangeland rehabilitation project. Holden-Scipio saw it as having desired impacts in the future, leading to optimism and strengthening the existing community structure.

C. PROJECT IMPACTS

After the initial interviews were conducted, the range rehabilitation project was pushed forward over a two year period. However, there was greater participation and involvement in the rehabilitation project in Holden-Scipio than in Oak City-Leamington. In addition, the project advanced more rapidly in the first two communities. The second and third sets of interviews were conducted as planned. Those interviewed in the first phase were re-interviewed two times. There was only one drop out, a newcomer to Oak City who became unemployed and was forced to move away.

The attribution of impacts on Oak City and Leamington are greatly complicated by two major factors. First, IPP has progressed on schedule, though the size has been scaled down considerably. Its construction has had significant impacts on the two towns. Second, nationally, agriculture has had serious difficulties over the

last two years. While the impact locally does not compare with the Mid-west, farmers in the study area are being adversely affected. Any analysis of change in the four towns must separate the non-project related change from that which is occurring due to rangeland rehabilitation.

Oak City and Leamington have experienced important increases in population: all attributable to developments not related to the rangeland project. Leamington and Oak City have experienced considerable growth as a consequence of IPP. The growth in Leamington is primarily on top of a hill on the edge of town that was formerly unused land. It is separated from the rest of Leamington by a steep hillside. While most residents, both new and old, speak of the harmony between the two groups, the potential for conflict is clearly present. In addition to being newcomers, the "hill people" are generally more well-to-do, better educated, and more cosmopolitan than the people of old Leamington. There have been disagreements over extension of a new city water line onto the hill and paving the roads into the hill development. In addition to residential growth, a part-time medical clinic has been built and operates in Leamington.

Oak City's growth is more recent than that of Leamington. Most of the developments are better integrated into the town's physical structure and do not stand away from the established community the way Leamington's does. An exception is the most recent and largest development which is outside of Oak City limits close to the mouth of Oak Creek Canyon. It is a development with

plans for 50 units on one-acre lots. If the IPP plant is held to the current two phases, this development will face problems because it is being built after the construction force has started to be cut back. If phase three is built, this housing development could have a major impact on Oak City by bringing many newcomers into town. They will differ from current residents the way the Leamington newcomers differ from the long-term residents. The impact will be greater, however, because of the greater numbers. The rangeland rehabilitation project has had no effect on migration in Oak City or Leamington.

Scipio has reversed its population decline, but it shows virtually no increase. Holden appears to have increased slight- ly. The rangeland project appears to have had some small impacts on population by enabling a few young people to stay in the area to farm with their parents or take over the family operation. The impact will not sustain long-term growth nor will it result in large increases.

The networking of residents is changing somewhat as noted in the discussion of population growth. The newcomers to Oak City and Leamington are generally accepted, but as a consequence of the facts that many of them do not share in the community history nor do they have long term-ties to the area the quality of the relationships between old-timers and new-comers is different. It is less intimate and personal. In addition, several newcomers are "marked" as temporaries who will move on when construction projects end.

The rangeland project appears to have had two kinds of impacts on interpersonal networks. First, there are indications in Holden and Oak City that there is some resentment over preferential treatment of some land and permit holders who benefit disproportionately from the project. Some of the resentment arises because of a feeling that the money should have been used to upgrade and increase recreational facilities.

Second, some people in Scipio and Holden have been able to maintain their lifelong friendships and extended family ties by virtue of being able to stay in these communities or by having children stay due to the rangeland project. No impacts were noted for Leamington.

In the short run the rangeland rehabilitation may adversely affect the cohesion of the community by creating some conflicts between the old time agricultural interests and the newcomers' interests in recreational use of the forest. The project has come along at a time when the viability of agriculture has been in question and alternatives such as IPP and other industrial efforts seemed to be doing well. The project re-asserts the viability of agriculture and sets the stage for some conflict with newcomers because the industries require an attitude and approach to life that differs from agriculture. The individual is forced to shift from the individualism and self sufficiency of agriculture to dependency and coordination of activity required by industrial technology. In addition, the newcomers see the Forest as a recreational resource which grazing interferes with.

In the long run, however, the strength of agriculture will provide a source of cohesion when IPP construction is gone. As the industrial alternative declines in numbers and importance, the agriculture interests will have an opportunity to demonstrate their viability and reassert their primacy.

The residents' well being has been subject to some changes. The development of IPP has resulted in the construction of new, middle income housing in Leamington and Oak City. Little has changed in terms of the infrastructure of any of the communities. Leamington has added a new water system.

The rangeland rehabilitation project does not offer much in the way of change in well being in general; however, some of those most directly involved in the project are beginning to find they have more money available for housing and other personal effects. It has also produced an increased sense of security, especially for those benefiting directly. It influences those not directly related to the project by giving them an increased sense of the viability of agriculture; the basis for much of their own value structure.

The years covered by the project have opened potential class divisions that have not been present in the past. Many of the newcomers to Oak City and Leamington are middle class, managers who do usually form a distinct class. It does not appear to have emerged yet. The range rehabilitation will have a weak tendency to support the existing situation with relatively little class

structure. Those being most benefited by the project are also strongly oriented to a community without class divisions.

Some of the value dimensions do appear to be changing as a consequence of the newcomers. At present the changes are at the level of diversity rather than representing changes in the values of the established citizens. Some of the newcomers, though not the majority, place less value on religion and the agricultural way of life than do the long term residents. Some, especially those from large metropolitan areas, place a more positive emphasis on city life. The range rehabilitation project has produced no changes in values. However, it does seem to confirm the values of the long time residents, especially in Scipio and Holden. The agricultural values, in particular, are strengthened for those who have always held them. They are less subject to doubt.

The organizational structure of the four communities has not changed. Some people expect to see a larger store in Oak City, but that has not occurred and is independent of the rangeland rehabilitation project. The project has one major organizational consequence, while it is still being developed. It forces the project participants to work with officials of the Forest Service, BLM, SCS, ASCS, and other agencies on a more frequent basis than in the past. In Holden and Scipio, this has resulted in more positive ties and an acceptance of the agency personnel as experts. In Oak City, the ties have grown more positive, but there are still doubts about the expertise of the personnel. In Leamington, attitudes toward Federal agencies do not appear to have changed.

Community structure also remains unchanged with a few minor exceptions. Leamington and Holden are improving their water systems. Land use remains unchanged, except for the conversion of some marginal agricultural land in and around Oak City and Leamington into housing.

The basic relationship between the Forest Service and residents of the four communities remains variable from one community to another as it did in 1983. Residents of Holden and Scipio continue to hold positive attitudes toward the agency and its personnel. The rangeland project, especially in its most recent phases, has strengthened the positive ties and attitudes. It appears to most that the planning and knowledge base used in the project development and management is working. The feeling that the project has reinforced the viability of agriculture is strongly present.

In Leamington and Oak City, the general attitude remains more negative. However, the attitude is improving in Oak City. While there are still several criticisms of the management of the ground cover, the deer herd, recreation land and grazing permits, the attitude is neither as negative nor strongly held as earlier. The attitudes toward the rehabilitation project remain skeptical and tentative. They have some questions as to whether the management procedures will yield the desired results.

In general, the rangeland project is located in an area near four homogeneous communities where traditional rural values remain. Oak City and Leamington are experiencing change in population numbers and homogeneity due to IPP. Holden and Scipio are not

changing very much. The rangeland project has strengthened the hold of tradition and rural values in the communities, with the greatest impact occurring in Holden and Scipio.

Summary and Recommendations

There are three major conclusions that emerge from the study. First, even against the background of some fairly dramatic extraneous changes in a community, such as Oak City and Leamington, it is possible to extract the impacts of a less dramatic, but significant project such as the rangeland rehabilitation project. In the case study reported here, the evidence indicates that the rangeland rehabilitation project can reinforce the traditional values and community organization usually attached to rural communities, even in the face of major powerful competing forces.

Second, a project such as the rangeland rehabilitation project has two major components that must be separated and examined carefully. There is a direct project impact, such as the project development producing changes in beliefs about the viability of agriculture as a way of life. For example, some people in Scipio and Holden have been reinforced in the belief that agriculture is now something they and their children can continue to make a living in. In addition, an indirect project impact arises due to the way it is perceived by residents and the expectation that the project may have certain impacts which are valued in specified ways. In this dimension, residents must be seen as rational actors who gather data, process it as information and give meaning to

their surroundings and changes in it. The announcement of the project and its implementation lead to conclusions about the future that are reasoned out based on past experience and beliefs. The actors, then act on those conclusions.

A manager of such a project must anticipate the direct impact and indirect impacts both as natural phenomena and as information for decision-making by the residents. In many ways, by treating the locals as rational actors, the agency personnel have succeeded in giving farmers in Holden and Scipio information that they can use in deciding how to conduct their lives and assisting them in making their decisions. One of the problems in Oak City and Leamington when contrasted with Scipio and Holden is that the agency claims are not viewed as being credible by the locals. As a consequence they do not decide to act "as if" the project is going to succeed. Such an act inhibits both the direct and indirect effects of the project.

Third, Forest Service personnel must continue to improve their skills in communicating their plans and in making them credible to the locals. The indirect impacts of the project are a direct function of the image of the Forest Service in these communities. When the Service personnel are accepted as reliable experts, the locals act favorably and help to create positive impacts. Where the personnel do no enjoy such positive reputations, the locals create neutral or negative indirect impacts.

Exhibit 1

Community Structure

I. Individuals
   - A. Numbers and Migration
   - B. Networks of Individuals
     1. family ties
     2. friendship ties
     3. work-organization links
     4. cohesion-conflict among individuals and networks
   - C. Personal Well-Being
     1. Objective--housing, income, education
     2. Subjective--alienation, hope, happiness, security
   - D. Class Membership
     1. class divisions
     2. political divisions
   - E. Values-Culture
     1. basic values--family, religion, nation, universe
     2. symbolic meanings--accepted and proscribed behaviors, common symbol systems

II. Oganizations
   - A. Numbers and Migration
   - B. Networks of Organizations
     1. task sets
        - a. suppliers
        - b. markets
        - c. regulators
     2. ecological sets
        - a. personal interlocking
        - b. conflict-cohesion on local level
     3. linkages to individuals
        - a. employees
        - b. consumers-clients
   - C. Organizational Well-Being
     1. worker supply and quality
     2. optimism
     3. sales
     4. goodness of community services
   - D. Bureaucratization
   - E. Decision-Making Structure

III. Community Structure
   - A. Land Use and Tunure Patterns
   - B. Infrastructure
     1. physical facilities
     2. service resources

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